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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,923	07/24/2003	Martin E. Trzcinski	84333WFN	9486

7590 04/28/2005

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EXAMINER


WEBB, CHRISTOPHER G

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/625,923	TRZCINSKI ET AL. 	
	Examiner	Art Unit	
	Christopher G. Webb	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>20030821, 20050126</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arakawa (US 5,665,976, hereafter Arakawa) in view of Struye et al. (US 2001/0012386 hereafter Struye).

With respect to claim 1, Arakawa discloses a method for erasing noise and residual image in a storage phosphor comprises: reading an exposed storage phosphor (col. 3, lines 50-53) which is transported in a first direction (fig. 1, element A) by scanning said storage phosphor in a line scan direction perpendicular to said first direction (col. 5, lines 63-65), with a reciprocating stimulating beam of light (fig. 1, element 11) which causes said storage phosphor to emit light in a first frequency range (col. 1, lines 48-50); and erasing said storage phosphor after said reading out (col. 3, lines 53-56) with a light of a second frequency range outside of first frequency range (col. 7, line 14) and additionally with light of said first frequency range. Arakawa also discloses a step of reversing the storage phosphor, in which image acquisition is stopped while the phosphor is erased with said light in said first frequency range (col. 6, lines 52-56). Arakawa does not disclose that the beam of light is suppressed during retrace nor does Arakawa disclose that the erasure with light of a first frequency range

occurs during retrace while the stimulating light is suppressed. Struye teaches the step of suppressing the beam of light during retrace (paragraph [0040], lines 5-7). It would have been obvious at the time of invention to one of ordinary skill in the art to include the step of suppressing the beam of light during retrace as taught by Struye into the method disclosed by Arakawa. Furthermore, it would be obvious to perform the step of erasure with light of the first wavelength range while the stimulating light beam is suppressed because image acquisition is not occurring. Suppression of the stimulating light beam during retrace would allow for image acquisition to be stopped and the step of erasing with light of a first wavelength range to be performed. Doing the erasure during retrace would save on the total time required for the process, which would improve its efficiency.

As to claim 2, Arakawa discloses that the first frequency range includes blue light (col. 7, line 11) and the second frequency range includes infrared and/or red/orange light (col. 7, line 14).

As to claim 3, Arakawa discloses the step of continuing erasing said storage phosphor with light of said first and second frequency ranges after said read-out is completed if latent image still exists in the storage phosphor (col. 6, lines 36-43).

As to claim 4, Arakawa discloses that the continuing erasing is carried out with the storage phosphor being transported in a reverse direction to said first direction (fig. 1, element B).

As to claim 5, Arakawa discloses an apparatus for erasing noise and a residual image comprising: a storage phosphor transport (fig. 1, element 4) for transporting an

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exposed storage phosphor (col. 3, lines 50-51) in a first direction (fig. 1, element A); a storage phosphor image read-out assembly (fig. 1, element 2) including a source of a stimulating light (fig. 1, element 10) and a reciprocating mirror (fig. 1, element 12) for scanning said light beam (fig. 1, element 11) in a line scanning direction perpendicular to said first direction (col. 5, lines 63-65) which causes the storage phosphor to emit light in a first frequency range (col. 1, line 50); a storage phosphor erase assembly (fig. 1, element 3) including a first source of light spanning the width of said storage phosphor (fig. 1, element 21a) for emitting erase light in a second frequency range outside of the first frequency range (col. 7, line 14); a second source of light spanning said width of said storage phosphor (fig. 1, element 21'a) for emitting erase light in said first frequency range (col. 6, lines 52-56); and said first source of light is on all the time (col. 6, lines 23-25). Arakawa does not disclose that the light beam is suppressed during retrace nor does Arakawa disclose that said second source of light is only on during retrace. Struye teaches the use of a light chopper that stops the beam during retrace (fig. 1, element 5). It would have been obvious at the time of invention to one of ordinary skill in the art to include the beam stopping apparatus of Struye into the apparatus disclosed by Arakawa. Furthermore, it would have been obvious to have the second light source only on during retrace. The stopping of the beam during retrace would prevent the accidental stimulated emission of the next read line during retrace and having the second light source only on during retrace would prevent any of that light being detected as stimulated light from the storage phosphor.

As to claim 6, Arakawa discloses that the first frequency range includes blue light (col. 7, line 11) and the second frequency range includes infrared and/or red/orange light (col. 7, line 14).

As to claim 7, Arakawa teaches the use of a sodium vapor lamp as a first light source and a mercury vapor lamp as a second light source (col. 7, lines 10-19). Arakawa does not disclose the use of arrays of LEDs spanning the width of said storage phosphor. Struye teaches that an array of LEDs can be used to replace sodium lamps and/or mercury lamps (paragraph [0058]). It would have been obvious at the time of invention to one of ordinary skill in the art to replace the lamps of Arakawa with the LED arrays of Struye. LEDs are well known in the art to be good light sources because of their long life and low power consumption. Further, it would be obvious to specify the width of the LED array to match that of the storage phosphor in order to affect an even and complete erasure.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arakawa in view of Struye as applied to claim 7 above, and further in view of Shimizu et al. (US 2002/0070681, hereafter Shimizu). Arakawa in view of Struye does not disclose that the assembly includes highly reflective light deflectors for deflecting light from the LEDs onto the storage phosphor. Shimizu teaches the use of reflective surfaces (fig. 21, element 110) to direct light from an LED array (fig. 21, element 100). It would have been obvious at the time of invention to one of ordinary skill in the art to use the reflective deflectors of Shimizu in the LED array of Arakawa in view of Struye. This

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combination would allow for a lower power to be delivered to the LED array, as more of the light emitted from the array would be incident upon the storage phosphor.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,339,225 B1, US 2005/0012057, and US 6,773,160 also disclose relevant prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher G. Webb whose telephone number is (571) 272-8449. The examiner can normally be reached on 9AM - 5:30PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CGW


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